

THE  
ZOOLOGICAL RECORD

VOLUME THE NINETY-THIRD

BEING THE

RECORDS OF ZOOLOGICAL LITERATURE

RELATING CHIEFLY TO THE YEAR

1956

COMPILED FOR THE ZOOLOGICAL SOCIETY OF LONDON BY

D. V. AGER, J. C. BATTERSBY, E. BROWNING, M. BURTON, D. B. CARLISLE, A. M. CLARK, R. H. CUMMINGS, M. A. EDWARDS, A. G. C. GRANDISON, J. P. HARDING, A. B. HASTINGS, R. W. HAYMAN, R. W. INGLE, S. MARKOWSKI, R. A. NEAL, E. F. OWEN, G. PALMER, S. PRUDHOE, A. E. SALISBURY, W. E. SWINTON, J. T. TEMPLE, W. P. C. TENISON, H. DIGHTON THOMAS, E. I. WHITE AND THE COMMONWEALTH INSTITUTE OF ENTOMOLOGY.

EDITED BY

G. BURDER STRATTON, M.B.E., A.L.S.

*Explorate solum: sic fit via certior ultra.*

LONDON:

PUBLISHED BY

THE ZOOLOGICAL SOCIETY OF LONDON

1959

## PREFACE.

THIS Volume, the ninety-third of the Zoological Record, deals mainly with the publications of 1956. It includes also those which, for various reasons, were not recorded in previous volumes.

Articles and books which have not yet reached this country, but concerning which knowledge has been obtained from other sources, are recorded as far as the information permits. They will, if necessary, be dealt with more fully when they can be seen by the Recorders.

In this volume Section 11 (Trilobita) has been brought up to date by including a record of the literature relating to the trilobites for both the years 1955 and 1956.

The compilation of the Zoological Record is a heavy task, and the Editor and Recorders of the sections deserve the thanks of zoologists throughout the world for their invaluable services. The Zoological Record Committee expresses its warm thanks to these workers, and to the institutions and individuals, listed on page iv, for their donations towards the expense of publishing the volume.

L. HARRISON MATTHEWS, Sc.D., F.R.S.,  
*Scientific Director,*  
Zoological Society of London.

It will greatly assist in the production and ensure the inclusion of the titles of books and articles in the Record if authors will forward a copy of their paper or memoir to the Editor of the Zoological Record, Zoological Society of London, Regent's Park, London, N.W.1. In the case of separately printed copies of articles so forwarded the original pagination should be given.

*Published with financial assistance from UNESCO—see p. iv.*

## ZOOLOGICAL RECORD FUND.

*Donations received during 1956.*

	£	s.	d.
Albany Museum, Grahamstown .....	2	2	0
American Entomological Society .....	8	17	10
American Museum of Natural History .....	177	7	11
American Ornithologists' Union .....	8	17	8
American Society of Ichthyologists and Herpetologists .....	40	12	6
Anonymous .....	100	0	0
Auckland Institute and Museum .....	3	0	0
Bombay Natural History Society for Vol. 91 .....	5	0	0
" " " " for Vol. 92 .....	5	0	0
British Herpetological Society .....	2	2	0
British Museum (Natural History) .....	450	0	0
British Ornithologists' Club .....	5	5	0
British Ornithologists' Union .....	15	15	0
British Trust for Ornithology for Vol. 91 .....	2	0	0
" " " " for Vol. 92 .....	2	0	0
Brooklyn Entomological Society .....	3	10	8
California Academy of Sciences .....	10	0	0
Cambridge University, Department of Zoology .....	5	0	0
Canterbury University College, New Zealand .....	3	3	0
Cape Town, University of .....	1	10	0
Challenger Society for Vol. 92 .....	5	5	0
" " " " for Vol. 93 .....	5	5	0
Chicago Natural History Museum .....	17	16	3
Duke University, Department of Zoology .....	17	15	11
Entomological Society of America .....	35	9	10
Geological Society of London .....	15	0	0
Harvard University .....	44	14	4
Hawaiian Entomological Society .....	17	16	3
International Council of Scientific Unions .....	500	0	0
Kennicott Club of Chicago .....	8	17	10
Linnean Society of London .....	15	0	0
Linnean Society of New South Wales .....	11	19	0
Liverpool School of Tropical Medicine .....	3	3	0
London School of Hygiene and Tropical Medicine .....	2	2	0
Malacological Society of London .....	2	2	0
Michigan, University of .....	35	11	9
Naples Zoological Station .....	10	0	0
New York Entomological Society .....	17	15	11
New York Zoological Society .....	35	14	4
Paleontological Society .....	17	16	3
Rowan, Professor William .....	5	0	0
Royal Entomological Society of London .....	25	0	0
Royal Society of Tropical Medicine and Hygiene .....	5	5	0
Smithsonian Institute of Washington .....	35	15	0
Society of Systematic Zoology for Vol. 90 .....	2	19	9
" " " " for Vol. 91 .....	11	4	11
Transvaal Museum .....	5	5	0
Wellcome Research Institution .....	17	10	0
Witwatersrand, University of the .....	2	0	0
Zoological Society of London .....	250	0	0
	<hr/>		
	£2,030	7	11
	<hr/>		



## CONTENTS.

1. COMPREHENSIVE ZOOLOGY. By S. MARKOWSKI, D.Sc.  
Pp. 1-27.
2. PROTOZOA. By R. H. CUMMINGS, Ph.D., B.Sc. and R. A. NEAL,  
D.Sc., Ph.D. Pp. 1-124.
3. PORIFERA. By MAURICE BURTON, D.Sc. Pp. 1-6.
4. COELENTERATA. By H. DIGHTON THOMAS, M.A., Ph.D.  
Pp. 1-43.
5. ECHINODERMA. By A. M. CLARK, M.A. Pp. 1-21.
6. VERMES. By S. PRUDHOE. Pp. 1-118.
7. BRACHIOPODA. By D. V. AGER, Ph.D., B.Sc. and E. F. OWEN.  
Pp. 1-34.
8. BRYOZOA. By A. B. HASTINGS, M.A., Ph.D. Pp. 1-18.
9. MOLLUSCA. By A. E. SALISBURY, A.M.I.E.E. and MARCIA A.  
EDWARDS, B.Sc. Pp. 1-149
10. CRUSTACEA. By J. P. HARDING, Ph.D. and R. W. INGLE.  
Pp. 1-77.
11. TRILOBITA (1955). By J. T. TEMPLE, M.A., Ph.D. Pp. 1-69.  
TRILOBITA (1956). By J. T. TEMPLE, M.A., Ph.D. Pp. 1-73.
12. ARACHNIDA, to which are added Merostomata, Pantopoda,  
Pentastomida, Tardigrada, Myriapoda and Onychophora.  
By E. BROWNING. Pp. 1-126.
13. INSECTA. By the Commonwealth Institute of Entomology.  
Pp. 1-536.
14. PROTOCHORDATA. By D. B. CARLISLE, M.A., D.Phil.  
Pp. 1-14.
15. PISCES. By G. PALMER and E. I. WHITE, D.Sc., F.R.S. Pp.  
1-93.
- 16A. AMPHIBIA. By ALICE G. C. GRANDISON, B.Sc. and W. E.  
SWINTON, Ph.D. Pp. 1-106.
- 16B. REPTILIA. By J. C. BATTERSBY and W. E. SWINTON, Ph.D.  
Pp. 1-122.
17. AVES. By Lt.-Col. W. P. C. TENISON, D.S.O. Pp. 1-121.
18. MAMMALIA. By R. W. HAYMAN. Pp. 1-107.
19. LIST OF NEW GENERIC AND SUBGENERIC NAMES.  
By L. G. ELLIS. Pp. 1-21.

MADE IN GREAT BRITAIN  
BY HARRISON AND SONS LIMITED  
BY APPOINTMENT TO HER MAJESTY THE QUEEN  
PRINTERS, LONDON, HAYES (MIDDX.) AND HIGH WYCOMBE